**Respiration**

**(2.2 Notes)**

* Respiration is the process by which cells obtain energy from glucose
* During respiration, cells break down simple food molecules such as sugar and release the energy they contain
* Cells store and use energy
* During photosynthesis, plants collect energy in the form of sunlight and “save” it in the form of carbohydrates and starches
* Respiration breaks down the stored carbohydrates when cells need energy
* Respiration has two stages: 1. Molecules of glucose are broken down into smaller molecules 2. Small molecules are broken down into even smaller molecules
* Where do these stages occur? 1. Cytoplasm 2. Mitochondria
* Respiration Equation:

What do you notice about the respiration equation?

* Fermentation is an energy-releasing process that does not require oxygen
* Some single-celled organisms live where there is no oxygen, such as deep in the ocean or in the mud of lakes and swamps. They obtain energy through fermentation.
* Two types of fermentation: 1. Alcohol: yeast and some other single-celled organisms break down sugars (alcohol is a product) 2. Lactic Acid: takes place in your body; muscle cells use up oxygen faster than it can be replaced (one product is known as lactic acid – build up of this causes a painful sensation)

